

## IN THE SPECIFICATION

Please replace the paragraph beginning at page 9, line 16, with the following rewritten paragraph:

When two dimensional broken(or disconnected) mesh network 500 of Fig. [[1]] 5 is expanded into n dimensional broken mesh network, the n dimensional broken mesh network is composed of N switching elements, each switching element has its own n-tuple coordinates, expressed  $(d_1, d_2, \dots, d_n)$ . Where  $d_1$  can vary from 1 to  $D_1$ , and  $d_2$  can vary from 1 to  $D_2$ , and so on. The total number of switching nodes, N, is obtained  $D_1 \times D_2 \times \dots \times D_n$ . Each switching node has  $2 \times n$  connections to the adjacent nodes, which has  $(n-1)$  same coordinates and the other one coordinate different from the switching node by  $\pm 1$ . There are  $2 \times n$  disconnected surfaces of the normal mesh network and each surface has several disconnected links. The traffic trunk or link is connected to the disconnected links. There are two surfaces for one dimensional axis, for example, the surface nodes of k-th dimension have coordinates  $(d_1, d_2, \dots, d_k=1 \dots, d_n)$  or  $(d_1, d_2, \dots, d_k=D_k \dots, d_n)$ , where  $d_1$  can vary from 1 to  $D_1$ , and  $d_2$  can vary from 1 to  $D_2$ , and so on. And the number of links for k-th dimensional surface are  $2 \times (D_1 \times D_2 \times \dots \times D_{k-1} \times D_{k+1} \dots \times D_n)$ .

Please replace the paragraph beginning at page 10, line 13, with the following rewritten paragraph:

To reduce the routing delay in the broken mesh switching network, Fig. 7, shows a shortcut routing 770, so called jumping route, into diagonal direction. Each switching element 720 has 8 connections 720 (In Fig. 5, each switching element has 4 connections). The increased jumping routes 770 reduce the longest routing path in the switching system. The longest routing path in Fig. 7 passes through 3 switching elements. The external data link 730 connected to input output protocol processor 710a has 3 internal connections 740 compared to 1 connection in Fig. 5. These extra connections can be used for the higher fault tolerance. Even when one of the three internal links is out of order, the system can operate without any serious problem. These extra connections, also, prevent a system fault even though the nearest switching element 720e to the switching element 710a goes out of order by allowing communication to the adjacent switching elements 720e', 720e''. The introduction of diagonal jumping route introduces dangling diagonal link 750, which can be used for system control purpose or for extra input output external data links.

Please replace the paragraph beginning at page 11, line 5, with the following rewritten paragraph:

Fig. 8 shows four system traffic control processors 880 to the dangling diagonal links 75, 850. These processors 880 are also connected each another by the control system bus 890, through which the system information are synchronized among the control processors. All switching elements 820 reports its over-loading situation to the nearest control processor assigned to each switching element. For the higher system fault tolerance, the control system bus also can be duplicated.